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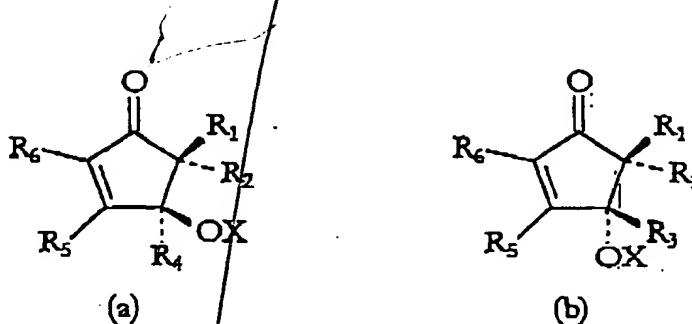
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ARTICLE 34

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## Claims

1. A compound for use in medicine with formula (a) or (b):-



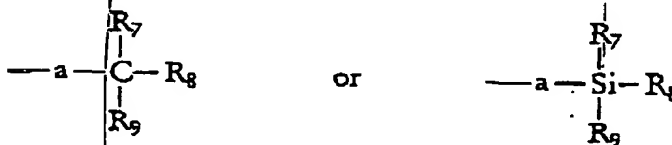
wherein:

R<sub>1</sub> and R<sub>2</sub> are, independently, hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted aminoalkyl, substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted carbocyclic aryl, substituted or unsubstituted aralkyl, or substituted or unsubstituted heteroaromatic or heteroalicyclic,

R<sub>3</sub> and R<sub>4</sub> are hydrogen,

R<sub>5</sub> and R<sub>6</sub> are, independently, hydrogen or a halogen,

and X has the formula:-



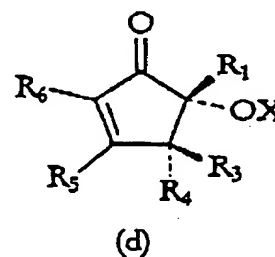
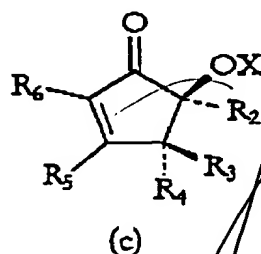
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wherein  $R_7$ ,  $R_8$  and  $R_9$  are, independently, hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted aminoalkyl, substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted carbocyclic aryl, substituted or unsubstituted aralkyl, or substituted or unsubstituted heteroaromatic or heteroalicyclic, and  $a$  is absent or a linking group, optionally a hydrocarbyl linking group;

or with formula (c) or (d):-



wherein:  $R_1$  and  $R_2$  are hydrogen,  $R_3$  and  $R_4$  are, independently, hydrogen, halogen, substituted or unsubstituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted aminoalkyl, substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted carbocyclic aryl, substituted or unsubstituted aralkyl, or substituted or unsubstituted heteroaromatic or heteroalicyclic, and  $R_5$ ,  $R_6$  and  $X$  are as defined above.

AMENDED SHEET

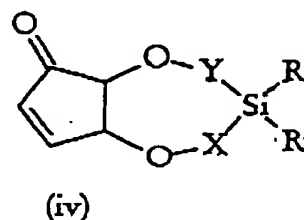
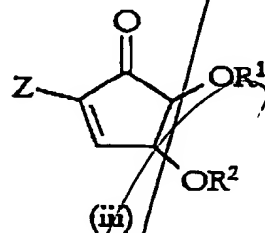
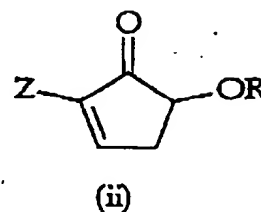
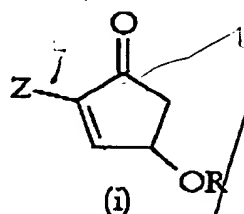
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2. A compound as claimed in claim 1 having formula (a) or (b).
3. A compound as claimed in claim 1 or claim 2 having higher activity than cyclopent-2-en-1-one in respect of one or more of the following:-
- activating HSF
  - inhibiting NF- $\kappa$ B
  - inhibiting the replication of HSV-1
  - inhibiting the replication of Sendai virus.
4. A compound for use in medicine according to any preceding claim, wherein X is an Si-containing group.
5. A compound for use in medicine according to any preceding claim, wherein  $R_7$ ,  $R_8$  and  $R_9$  are substituted alkyl, aryl or substituted aryl.
6. A compound for use in medicine according to any preceding claim, wherein X comprises at least 4 carbon atoms.
7. A compound for use in medicine according to claim 1 or any of claims 3-6, said compound having formula (c) or (d), wherein  $R_3$  and/or  $R_4$  comprises no more than 7 carbon atoms.
8. A compound for use in medicine according to claim 1 or any of claims 3-6, said compound having formula (c) or (d), wherein a hydrocarbyl side chain is not present at positions  $R_3$  and/or  $R_4$ .
9. A compound for use in medicine according to claim 8, wherein  $R_3$  and/or  $R_4$  is hydrogen.
10. R-(+)-4-tert-butyl dimethylsilyloxy-cyclopent-2-en-1-one.
11. S-(-)-4-tert-butyl dimethylsilyloxy-cyclopent-2-en-1-one.

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12. A compound for use in medicine according to any of claims 1 - 9 which is an S-enantiomer.

13. A compound for use in medicine with formula (i), (ii), (iii) or (iv):-



wherein Z is hydrogen or a halogen, R is an optionally substituted hydrocarbyl group including up to 8 carbon atoms, or a moiety incorporating at least one heteroatom and up to 50 carbon atoms, at least one of R¹ and R² in formula (iii) incorporates one or more heteroatoms and up to 30 or 50 carbon atoms, at least one of R¹ and R² in formula (iv) is an optionally substituted hydrocarbyl group, and X and Y are absent or are linking groups.

14. The use of a compound in the preparation of a medicament for treating a viral-mediated disorder, wherein the compound is as described in any of claims 1 to 13.

15. The use of a compound in the preparation of a medicament for treating a bacterial-mediated disorder, wherein the compound is as described in any of claims 1 to 13.

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16. The use of a compound in the preparation of a medicament for treating a disorder mediated by radiation, wherein the compound is as described in any of claims 1 to 13.
17. The use of a compound in the preparation of a medicament for treating an inflammatory disorder, wherein the compound is as described in any of claims 1 to 13.
18. The use of a compound in the preparation of a medicament for treating a disorder of the immune system, wherein the compound is as described in any of claims 1 to 13.
19. The use of a compound in the preparation of a medicament for treating ischemia, wherein the compound is as described in any of claims 1 to 13.
20. The use of a compound in the preparation of a medicament for treating arteriosclerosis, wherein the compound is as described in any of claims 1 to 13.
21. The use of a compound in the preparation of a medicament for treating a disorder involving cell proliferation, wherein the compound is as described in any of claims 1 to 13.
22. The use according to claim 21, wherein the disorder is a cancer
23. The use of a compound in the preparation of a medicament for treating a disorder involving damage to cells or killing of cells, wherein the compound is as described in any of claims 1 to 13.
24. The use of a compound in the preparation of a medicament for treating diabetes, wherein the compound is as described in any of claims 1 to 13.

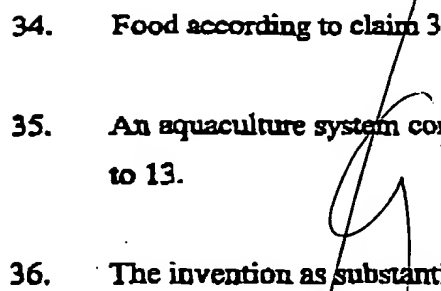
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25. The use of a compound in the preparation of a medicament for treating a disorder involving calcium loss or deficiency, wherein the compound is as described in any of claims 1 to 13.
26. The use of a compound in the preparation of a medicament for treating a disorder affecting aquatic organisms, wherein the compound is as described in any of claims 1 to 13.
27. The use according to claim 26 wherein the disorder is a viral disorder.
28. The use of a compound in treating a plant disorder, wherein the compound is a compound as described in any of claims 1 to 13.
29. The use according to claim 28, wherein the plant disorder is a viral disorder.
30. The use of a compound as a research tool for the analysis of one or more of the following: HSF, NF- $\kappa$ B, the heat shock response, viral replication, viral-mediated disorders, bacterial-mediated disorders, disorders mediated by radiation (e.g. by UV-radiation), inflammatory disorders, disorders of the immune system, ischemia, arteriosclerosis, disorders involving cell proliferation, disorders involving damage to, or killing of cells, or diabetes; disorders involving calcium loss or deficiency, disorders affecting aquatic organisms or plant disorders, wherein the compound is as described in any of claims 1 to 13.
31. A novel compound having a formula as described in claim 13, wherein the compound is not a compound as shown in Figure 2.
32. A pharmaceutical composition comprising a compound as described in any preceding claim and optionally including a pharmaceutically acceptable carrier
33. Food for an aquatic organism comprising a compound as described in any of claims 1 to 13.

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34. Food according to claim 33, wherein the food is fish food or crustacean food.
35. An aquaculture system comprising a compound as described in any of claims 1 to 13.
36. The invention as substantially hereinbefore described.
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